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BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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LAND
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

SUBJECT: Proposed 1st Elements of a Comprehensive Coastal Lands Policy – Integrated Shoreline Policy

OUR RESTLESS SHORES

Value of Beaches

Public access to and along our shoreline is an inalienable right of every citizen and is regarded by the courts and State law as inviolable. These rights are firmly rooted in the public trust doctrine, which is an ancient concept, stating essentially that the public has the right to use tidal waters for certain purposes such as fishing and navigation. So important is this right that in 1905, the Hawaii Supreme court applied the public trust doctrine to stop the construction of a seawall on Waikiki Beach. In their decision, they stated "walls and buildings extending seaward beyond the high water mark block the right of way and furnish no compensatory advantages to the public…." The public trust doctrine was expanded in the 1970's to include the entire sandy beach in *Sotomura*. The Hawaii Supreme Court declared that "public policy favors extending to the public use and ownership to as much of Hawaii's shoreline as is reasonably possible." Thus, in contemporary Hawaii, the entire sandy beach extending to the mauka edge of the shoreline, being the highest wash of the waves, is regarded as public domain.

Why are beaches of such great importance that access and use is guaranteed by law? In contemporary Hawaiian society, beaches serve critically important environmental and economic functions without which the State would certainly languish. (1) Beaches and coastal areas are part of Hawaii's culture and heritage. They provide enjoyment, ocean access, and spiritual fulfillment to Hawaii's people. (2) Beaches are the backbone of

Hawaii's multi-billion dollar visitor economy that provides the majority of the state's jobs and income. (3) Beaches and adjoining sand dunes are critical for flood and erosion prevention serving as a natural buffer to prevent or lower property damage from storm waves and surge, tsunami, sea-level rise, and seasonal high surf. As beaches narrow and disappear, shoreline properties become increasingly vulnerable to numerous coastal hazards. (4) Beaches and dunes are important elements of our shoreline environment and are critical to the health of the coastal marine ecosystem.

Unfortunately, sandy beaches in Hawaii have been lost at an alarming rate due to poor management practices including the construction of seawalls (vertical walls) and revetments (sloping walls), sand mining, and the destruction of sandy dunes, associated with incompatible development. Studies conducted at the University of Hawaii show that shoreline hardening[1] has resulted in the loss of nearly 25 percent of Oahu's sandy beaches. Beach loss in the State due to hardening of the shoreline is not limited to the island of Oahu. All of the main Hawaiian Islands have seen the loss or narrowing of their sandy beaches due to shoreline hardening.

Shoreline Hardening

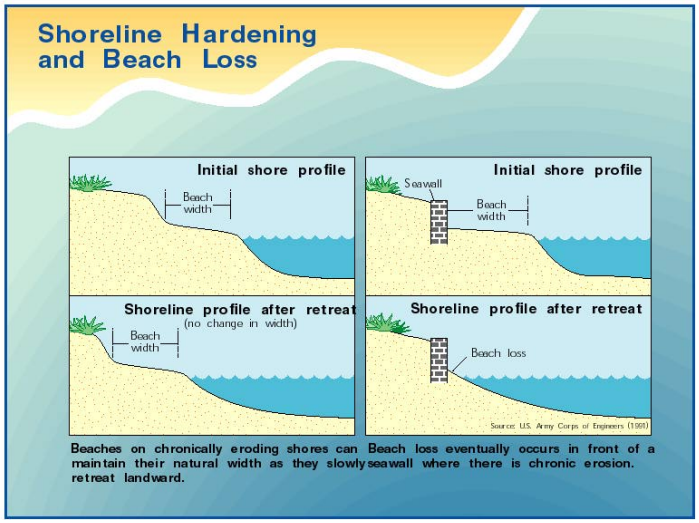

Figure 1. Shoreline Hardening and Beach Loss

It has been well documented that seawalls and shoreline structures on a chronically eroding shoreline can lead to beach loss or narrowing by restricting the natural movement of the shoreline landward[2]. With a hard structure in place the beach may not maintain the original width as it retreats landward and instead narrows (Figure 1). The Department attempts to mitigate negative impacts to the coastal system from shore protection structures by encouraging alternative erosion control measures in place of constructing seawall and revetments.

[1]Shoreline hardening is the fortification of land to retard coastal erosion. Hardening includes such things as seawalls, revetments, bulkheads, jetties, groins, sand bags, and any hard material used to retard or stop land loss by coastal erosion.

Although shoreline hardening is the most direct factor leading to beach loss, it is, in truth, the inevitable result of several interrelated socio-political, and economic conditions that promote the mismanagement of beach resources in Hawaii. Some factors to consider in this complicated equation include: 1) the ill-informed practice of maximizing development as close to the shoreline as possible which "pinches" the beach between immoveable development and the shifting sea. This can lead to narrowing of the active coastal zone within which beaches normally migrate; and 2) long-term shoreline change is rarely considered in the siting of coastal structures largely because of a historical lack of adequate coastal erosion data. Among abutting owners and developers, and even within some management agencies, there is a mentality that mitigating erosion problems is an activity that can be delayed until later. This leads to a flawed development process characterized by poor planning decisions that are reinforced by subsequent poor siting selection resulting in high vulnerability to erosion hazards. The end result is the rise of remedial erosion conflicts (i.e., seawall construction) between abutting owners, government authorities, and environmental "save our beaches" groups. It is ironic therefore, that the very thing that draws people to the beach may result it its demise.

Advances in modern marine geology and oceanography, coupled with daily news accounts of coastal disasters, highlight the dynamic but dangerous interface between the sea and the shore. This realization has fostered efforts by State and local governments across the country to focus attention on development within their respective coastal zones and to develop more proactive programs to address these pressing development and coastal hazards issue.

In Hawaii, these efforts have been ongoing for the past 25 years. Upon creation of the Hawaii Coastal Zone Management Program in the late 1970s, new polices and objectives were established to address a number of burgeoning coastal problems as well as improve the management of shoreline areas. Numerous studies were

[2] *Beach Loss Along Armored Shorelines on Oahu, Hawaiian Islands*. 1997. Fletcher, H. Charles., *et. al*. . Journal of Coastal

completed during intervening years to address issues including coastal erosion and other hazards, including: 1) Beach Change on Oahu, 1981; 2) Oahu Shoreline Study, 1988; 3) Hawaii Erosion Management Study, 1989; 4) Oahu Shoreline Management Plan, 1991; 5) Hawaii Ocean Resources Management Plan, 1991; 6) Beach Management Plan, 1992; 7) Beach Management Plan for Maui, 1997; and 8) Hawaii Coastal Erosion Management Plan, 1999, just to name a few[3]. Several new studies are currently in publication.

Despite the establishment of the Hawaii Coastal Zone Management Program in the late '70s, empowerment of the respective counties to manage coastal development within the Special Management Area (SMA), and numerous studies and reports on the subject of coastal zone management; coastal communities in Hawaii continue to face serious erosion hazards, seawalls continue to be built, and beaches continue to vanish with the continued development of the coastal zone.

The administration, through the Department of Land and Natural Resources (DLNR), is poised to implement new, proactive and sustainable practices to improve beach management in Hawaii. These practices rely upon credible supporting scientific studies and data on which to base decisions, and changes to the planning process accompanying coastal development. This commitment takes on a critical light given global and local predictions for continued, possibly accelerated sea-level rise and the ongoing focus of intense development along the Hawaiian shoreline. With the establishment of new institutional capacity at the state (Office of Conservation and Coastal Lands - OCCL), county (SMA Programs) and federal (NOAA Pacific Services Center) levels, there are new opportunities to vastly improve our system of shoreline management.

Research. Vol. 13, No. 1. pg. 209-215.

[3] Summaries of these reports are found in the Hawaii Coastal Erosion Management Plan (COEMAP, 2000) and the Hawaii Coastal Hazard Mitigation Guidebook, (In publication).

Integrated Coastal Policy

This is an ideal time to consider a comprehensive or “integrated” coastal policy, as it relates to shoreline management. Ideally, such a policy would establish common goals among concerned agencies with regard to beach conservation. These goals should link and re-enforce planning and decision-making between federal, state, and county authorities, where the land meets the sea.

With and integrated coastal policy, beaches and coastal areas can be protected from poorly planned shoreline projects at no additional public cost, yet with tremendous long-term economic, cultural, and environmental benefits. This integrated shoreline policy will illustrate this possibility.

The present effort to produce an integrated coastal policy is an extension of earlier planning ventures within the DLNR. In 1999 the Board of Land and Natural Resources (BLNR) adopted the Coastal Erosion Management Plan (COEMAP) as an internal policy for managing shoreline issues including erosion and coastal development in Hawaii. COEMAP recommends a number of strategic initiatives to improve our State's management of coastal erosion and beach resources. However, COEMAP's scope is of a general nature, and there is a need to formulate more focused polices in a variety of coastal management areas, including shoreline setbacks, shoreline hardening, enforcement, beach nourishment, intergovernmental collaboration, and development decision-making among others.

BASIC PROBLEMS ASSOCIATED WITH SHORELINE DEVELOPMENT

Problems associated with coastal development begin when planning and siting decisions are made without recognizing and acknowledging the potential for future shoreline change. The problem is compounded by the legal bifurcation of administrative responsibilities between state and county governments at the shoreline, even though the natural beach system forms one highly integrated coastal system straddling county and state jurisdictions. The State is responsible for lands seaward of the shoreline

(sandy beaches annually inundated by waves). The County is generally responsible for areas landward of the shoreline, including coastal dunes that share sand with the beach (Figure 2).

Figure 2. Example of State vs. County Jurisdiction of the Coastal Zone.

Thus, long-range planning, or even short term siting decisions by County authorities may not adequately consider and evaluate factors that lie outside of (seaward) their legal jurisdiction, such as the effects of sea-level rise, waves and currents, and other factors in coastal erosion including shoreline hardening. Three (3) of the Counties do not consider shoreline change in their planning and siting decisions as evidenced by their lack of variable erosion-based shoreline setbacks[4]. The result is that long-term erosion trends typically are not considered during the planning process. On shorelines undergoing chronic erosion, the inevitable outcome is property damage, seawall construction, beach loss and political and social conflict. As the retreating shoreline encounters developed structures that are improperly sited on the basis of county procedures that are grounded on the inadequate state setback of 40 feet, the sandy

[4] The County of Maui recently adopted new Shoreline Setback rules based on variable erosion rates. The County is currently utilizing this rule in planning and siting decisions. After one year of implementation,

beach, which is under the jurisdiction of the state, begins to sustain impacts in the form of narrowing and eventual demise.

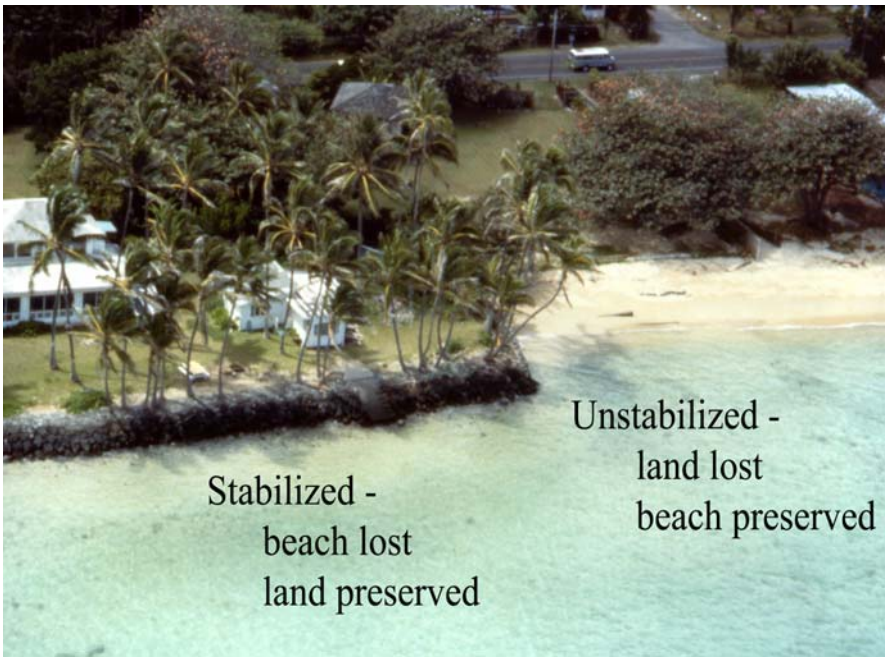

Figure 3. Example of distinction between beach loss and coastal erosion.

Faced with chronic erosion and land loss, abutting owners feel their only relief is to harden the shoreline. Unfortunately, this often results in yet another poor decision (this time by the landowner) to construct an illegal seawall or revetment. The state becomes involved through enforcement actions further complicating the situation. This is the vicious vector of coastal erosion: flawed planning producing poor siting, development threatened by erosion, construction of shoreline hardening leading to beach loss, loss of public resource (access as well as the beach environment) (Figure 3).

The present system is almost entirely reactionary and contentious. Because there has been little to no planning for long-term shoreline change, the response is always time-critical and completely reactionary every time a property owner or agency encounters an erosion event and potential property damage is apparent. Requests for permitted actions such as shoreline hardening, end up being decided on a case by case basis

Maui's new rules have experienced no legal challenge and the Planning Director reports satidfaction with the results.

without the guidance of any overarching criteria or goal or in reference to the existing policies on coastal preservation and instead focus only on the immediate and urgent nature of the erosion. Ultimately, authorities experience reduced effectiveness in dealing with remedial erosion problems because the state and counties have no coordinated process to deal with this problem despite the fact that the counties share of federal CZM funds requires such coordination.

EXISTING REGULATIONS AND POLICIES

Coastal erosion and its effects seriously challenge managers individually and in our capacity as planning and regulatory institutions. This is due to poor planning and siting of coastal structures and the bifurcation of County and State responsibilities at the shoreline. The problem underscores the need for a more integrated approach to shoreline management that unifies different government agencies responsible for regulating shoreline development, and that relies on our technical ability to offer viable, non-regulatory alternatives that achieve a balance between shoreline development and conservation. This does not mean that effective tools such as implementing greater shoreline setbacks, relocating threatened structures, beach restoration, or government re-organization will be acceptable to everyone, nor will it be affordable or painless. There will be challenging and difficult decisions to be made along the way. But if it is the intention of the present generation of managers to preserve beaches for the future, these decisions need to be made.

In the introduction to his book *Regulating Paradise*, Professor David Callies of the University of Hawaii Law School, proclaims, *"The use of land in Hawaii is intensely regulated."* Few would argue that Hawaii's lands and resources are under regulated. Land use controls have been evolving and expanding in Hawaii since the days of the Alii. Today, land use regulations rain down from all levels of government trying to control a variety of uses and actions. Hawaii as a whole is particularly hard hit because in addition to local land use regulations, it boasts a statewide land use system trying to balance competing developmental and environmental interests.

Hawaii does not need additional land use regulations. Statutes and ordinances are already replete with measures to protect coastal areas, beaches, and communities from the ravages of flooding and erosion. What is needed is effective use and application of the existing regulatory functions among government levels with consistent and sustainable policies at all levels of government, and its adjustment where flaws are identified. Some of these polices are articulated below.

The Hawaii State Coastal Zone Management program under Chapter 205A2b&c, Hawaii Revised Statues, contains ten (10) objectives and policies for the management of the State's resources. In addition to Section six (6) on "Coastal Hazards" policy number nine (9), "Beach Protection" seeks to do the following:

(A) *"Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;*

(B) *Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the site and do not interfere with existing recreational and water-line activities; and*

(C) *Minimize the construction of public erosion-protection structures seaward of the shoreline".*

The DLNR is responsible for the conservation of all beach lands in the State. In addition to implementing the polices and objectives of 205A, HRS, the BLNR enforces land use laws governing Conservation District lands, including beaches. The authorizing statute is Chapter 183C, HRS.

Although not prohibited by the BLNR, the construction of shoreline structures is seriously discouraged as an erosion management practice, "except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere

with existing recreational and waterline activities." Shoreline structures have potential to damage sandy beaches experiencing erosion. Understanding the dilemma faced by coastal property owners and government agencies faced with erosion threats, the DLNR has been busy identifying and developing alternatives to hard shoreline structures, including such things as beach nourishment, re-location of threatened structures, compensatory mitigation, temporary measures such as sea bags and other developing "soft" technologies, and dune preservation and restoration where possible. The Hawaii Coastal Erosion Management Plan (COEMAP), Hawaii Coastal Hazard Mitigation Guidebook (in publication) and the Hawaii Erosion Alternatives (in publication), all provide guidance to coastal property owners, government agencies and coastal communities on the management of erosion problems.

In addition to remedial erosion solutions, the Coastal Hazard Mitigation Guidebook provides a complete discussion of coastal erosion avoidance measures. This concept is related to early planning to identify erosion hazards early in the development process so that structures will not need to be protected in the future – i.e., remediation avoidance.

The respective County agencies are responsible for the regulation of areas landward of the certified shoreline. This is accomplished through the Special Management Area (SMA), a county overlay zone in which the policies and objectives of Chapter 205A, HRS, and Chapter 23 Shoreline Setbacks of the Revised Ordinances of Honolulu. (ROH) are to be considered in the County land use development process.

For instance, with respect to beach conservation, the City and County of Honolulu Revised Ordinances of Honolulu, Section 23-1.2 states as follows:

(a) *"It is a primary policy of the city to protect and preserve the natural shoreline, especially sandy beaches; to protect and preserve public pedestrian access laterally along the shoreline and to the sea; and to protect and preserve open*

space along the shoreline. It is also a secondary policy of the city to reduce hazards to property from coastal floods;

(b) *To carry out these policies and to comply with the mandate stated in HRS Chapter 205A, it is the specific purpose of this chapter to establish standards and to authorize the department of land utilization to adopt rules pursuant to HRS Chapter 91, which generally prohibit within the shoreline area any construction or activity which may adversely affect beach processes, public access along the shoreline, or shoreline open space"*.

Underlying all of these polices and objectives are the State's environmental requirements under Chapter 343, HRS. For projects within the shoreline area, an environmental report (Environmental Assessment or EA) must be prepared that evaluates the impact of projects on coastal processes and beaches. Projects must be shown to conform to the relevant state and county polices and objectives, as in the above examples. Often the EA's for shoreline development gloss over and fail to accurately acknowledge the proposed project's conformance with the above stated policies and thus the true environmental impact of these projects are often not revealed until the development is complete.

Why, despite all of these environmental policies do we continue to lose our beaches? While agency polices and objectives for beach conservation extend beyond regulatory lines, legal authority does not. In fact, Section 205A-4(b), HRS, states "The objectives and policies of this chapter and any guidelines enacted by the legislature shall be binding upon actions within the coastal zone management area by all agencies, ***within the scope of their authority***." Thus policies that on paper extend beyond jurisdictional boundaries are difficult if not impossible to implement where jurisdiction, or lack thereof limits authority. It would be much easier for the DLNR to effectively protect State beaches if it controlled development decisions in abutting upland areas. DLNR would have an active hand in community and infrastructure planning and would strive to site structures and facilities in such as way to protect both structures and beaches from the effects of erosion. Similarly, if counties were required by the constitution to protect

public beaches they might withhold or require alteration certain building applications for structures near the shoreline.

The Hawaii Coastal Zone Management Program (CZMP) could theoretically synthesize state and county planning processes within shoreline areas. Because CZMP policies and objectives extend from Hawaii's mountain tops out to the seaward limit of the State's police power and management authority. The CZMP, with its agency networks and staff, can enhance beach and shoreline conservation by fostering cooperation between agencies to jointly implement CZMP policies, and by showing leadership in key resources areas such as shoreline management. Unfortunately the Hawaii CZMP has traditionally maintained a distant relationship with local implementing agencies, spending far more time with its federal partners. One reason for this is that they hold only minor permitting authority within coastal lands and are essentially powerless to implement changes in policy. While they do pass through important federal funds to county agencies that theoretically require county adherence to federally mandated conservation goals, the CZMP has rarely chosen to exercise this authority in any meaningful way.

Nevertheless, DLNR is beginning to overcome these challenges in shoreline management. With the establishment of the Office of Conservation and Coastal Lands (OCCL) within the DLNR, and its network of key stakeholders including University of Hawaii scientists and the State Erosion Committee, efforts have been underway to assist county agencies with shoreline erosion problems. DLNR can offer help to Counties in several ways:

1. By promoting and developing sand nourishment, relocation, or remedial erosion control methods, the Counties feel less pressured to approve seawalls. The OCCL, in partnership with the University of Hawaii Sea Grant Program is developing new guidelines for remedial erosion management solutions via its publication and dissemination of "Hawaii Erosion Alternatives".

2. OCCL is developing guidelines to assist County agencies with longer-term coastal planning issues. The concept is to avoid erosion hazards through early planning (e.g., requiring a developer to prepare an erosion hazard assessment as a prerequisite to acceptance of a subdivision application). With the proper data in hand, these measures can usually be implemented within existing county and state regulations, with acceptable benefit to costs ratios.
3. Identification of priority coastal areas that require immediate consideration of the coastal land use policies as well as classification of the existing coastal resources to enhance the prioritization of those areas for environmental assessment.

DLNR, working closely with the University of Hawaii, originally became involved in this effort by the formation of the State Erosion Committee, within the Office of Planning Coastal Zone Management Program. This committee has brought state, county, and federal agencies together with public stakeholders to discuss shoreline issues. The committee encouraged all of the counties, as well as other State agencies, to endorse COEMAP, which was the State's first strategic plan for coastal erosion management. An outgrowth of this was the 1999 passage of Act 84, the "Beaches Act" by the State Legislature creating a special fund for beach management under the authority of the DLNR. The next and critical step was to establish and empower the OCCL.

At a time when government agencies were being uniformly downsized, key state authorities had the foresight to create OCCL. The purpose of OCCL is to help resolve shoreline issues statewide, by showing leadership on critical issues, such as enforcement on illegal shoreline structures, beach restoration efforts, remedial erosion control solutions, integrated coastal management polices, and enlightened coastal planning. Another purpose is to develop educational materials and guidance manuals for coastal communities, the coastal engineering industry, and regulatory agencies, forming a comprehensive approach to the management of shoreline hazards. OCCL also serves as a clearinghouse of data and information on coastal processes, and plans

and implements demonstration projects of innovative approaches to beach management that are deemed likely to have application on a statewide basis.

The OCCL plan is to use these resources and knowledge to bridge the gap in shoreline management between state and local authorities that continues to cause significant turmoil in coastal areas. This may be accomplished through the establishment of interagency policies that do not end merely with the extent of the agencies jurisdiction or "*within the scope of their authority*", but with comprehensive policies that treat shoreline management as a single integrated administrative unit and provide agencies with practical tools and skills necessary to improve management of these sensitive, and uniquely Hawaiian environments.